

Biospheric Sciences Branch Highlights July-August 2001

**** Research proposals funded**

Marc Imhoff and Jon Ranson were awarded a grant from NASA/HQ to explore the development and use of a DoD VHF radar sensor for vegetation biomass and carbon cycle science related studies.

Marc Imhoff and Lahouari Bounoua were selected to be a part of the NASA Carbon Cycle Science Team as a result of a successful proposal to the Carbon Cycle Science NRA. The title of the work is: Locating Human Risks to Biodiversity: A Carbon Balance Approach. It is global in scope and uses carbon as the "common currency" for addressing both climate and conservation issues. The World Wildlife Fund is a principal research partner.

**** Earth Observing #1 Mission Technology**

The New Millennium Program held an Earth Observing #1 Mission Technology Forum at the Greenbelt Marriott Hotel, August 15-16. This forum presented a description of the new technologies, individual design overviews, recent flight-validation results, lessons learned, and the current technology transfer and infusion opportunities. It was of particular interest to anyone involved in the development of remote sensing systems or anyone involved in the application of Earth images for scientific, commercial, defense, or intelligence purposes. More information can be found on the EO-1 web site at eo1.gsfc.nasa.gov.

**** Code 923 Scientists attend the 6th Annual International GLOBE conference**

Dr. Elissa Levine (Code 923) attended the 6th Annual International GLOBE conference in Blaine, Washington on July 22-25. Presentations were given by GLOBE scientists, US partners, and representatives of 30 of the 97 countries participating in GLOBE. GLOBE (Global Learning and Observation to Benefit the Environment) is an International Environmental Education partnership between scientists, teachers, and students to help improve global awareness about the environment, provide important data for Earth Science research, and improve math, science, and technology skills of students.

Conference reports included applications of the more than 5 million data records measured by students world wide in the areas of atmosphere/climate, hydrology, soils, and land cover. Jessica Robin (Code 923) and Dr. Levine co-authored a paper with Dr. Susan Riha of Cornell University on the use of GLOBE student data to setup, drive, and validate a

Soil-Vegetation-Atmosphere (SVAT) model (GAPS). Other papers included the use of GLOBE data to interpret Landsat imagery, identify time of "bud-burst" for global warming studies, and evaluate permafrost melting in northern latitudes. New protocols and instruments to measure ozone, atmospheric haze, and relative humidity were also discussed and are scheduled to be added to the suite of GLOBE measurements. GLOBE is proving to be an excellent resource for ground based Earth Science data to complement remote sensing products, modeling efforts, and other science and technology research. An evaluation of the GLOBE program for improving student math, science, and technology skills was also presented and showed excellent results.

More information about the conference and the GLOBE program can be obtained at www.globe.gov.

**** Code 923 Scientists participate in GLOBE Tribal Colleges Workshop**

Drs. Elissa Levine and Dan Kimes of the Biospheric Sciences Branch (Code 923) participated in the GLOBE Tribal Colleges Workshop in Flagstaff Arizona, August 5-12. The purpose of the workshop was to train members of the tribal colleges as GLOBE teachers and to incorporate "native ways of knowing" into the GLOBE protocols. Seventeen Tribal Colleges were represented and attendees included educators, administrators, and tribal elders. The workshop was extremely successful and many follow-up activities both in education and science collaboration are being planned.

**** E. Levine interviewed for PBS video**

Dr. Elissa Levine (Code 923) was interviewed as part of a PBS video for the American Environmental Review (AER) program which will focus on the "Importance of Soil". AER is moderated by Morley Safer (of "60 minutes") which focuses on critical environmental issues in the US. It is a short piece (2-3 minutes) that is shown between regularly scheduled PBS shows. The soil-focused segment will be aired nationally sometime this fall, although the exact time is left to the discretion of local television stations.

**** First volume of SAFARI 2000 CDROM Series available to researchers**

The first volume of the SAFARI 2000 CDROM Series has been produced and is available to interested researchers. The 2-disc volume primarily contains SeaWiFS, AVHRR, and TOMS products, regional subsets of published global data sets, software tools, and SAFARI documents (e.g., the Data Policy). The CDs were distributed at an international SAFARI workshop in Zambia.

Hereafter, copies will be available through the Oak Ridge National Laboratory DAAC. SAFARI is a 3-year interdisciplinary science activity designed to develop a better understanding of the southern Africa earth-atmosphere-human system. Programmatically, it serves as an organizational umbrella to maximize the overall efficiency and effectiveness of various environmental studies occurring in the region.

**** Fluorescence Project selected by Terrestrial Ecology Program (NASA Headquarters) to conduct three-year project**

The Fluorescence Project, which is jointly sponsored by the Biospheric Sciences Branch and the Hydrology/Remote Sensing Laboratory at USDA/BARC and led by Dr. Elizabeth Middleton of Code 923, has been selected to conduct a 3-year project into the use of fluorescence to determine vegetation health and physiological status. The proposal/project is entitled "Determining Photosynthetic Efficiency and Carbon/Nitrogen Cycling in Vegetation Using Active and Passive Fluorescence Techniques".

**** J. Ranson interviewed by Fox 5 television regarding use of NASA's Terra satellite images for monitoring western U.S. wildfires**

A Monday (August 20, 2001) evening FOX 5 television news broadcast reported on how daily images of western U.S. wildfires from NASA's Terra satellite are used by the U.S. Forest Service (USFS) to combat forest fires. Interviews with Drs. Jon Ranson (Code 923) and Jacques Descoitres of GSFC were featured. The interviews were a result of A NASA press release describing a joint activity between GSFC, the University of Maryland at College Park (UMCP), and the USFS, and is a result of the rapid response demonstration done by the Terra Project Science Office and UMCP, with the USFS last summer. USFS is now finishing their own Terra/MODIS direct broadcast system in Salt Lake to get in-house rapid response data. This story has received wide spread media attention.